

THE TEACHING

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A LECTURE

ON

THE TEACHING OF HYGIENE IN SCHOOLS.

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Quis custodiet ipsos custodes? or, rather, I should say *Quis precipiet ipsos preceptores?* I am here, it seems, to teach the teachers; teachers who know, perhaps, on some points, certainly in technical matters, more than I do. With others, also perhaps, I may be more familiar. Still, it may be a relief to the tension of your minds to put yourselves occasionally in the position of learners for a time, even if you gain nothing more by it than a little moral support from an outsider. If I were to say that the best method of teaching hygiene in schools is not to teach it at all, you would think I was making an Irish bull, so I will not say so, but leave you to deduce it from my remarks, if you find they bear that construction. Did you ever feel despair? Despair of making any impression on those you teach? Despair of any possible result from sowing good seed on what appears to be absolutely sterile soil? Your pupils' thoughts were evidently far away. Were they? You do not know. You were speaking to human beings at the most receptive age, when the brain is growing and active, when it easily receives impressions and is wont to retain them perhaps through life. I know from experience that they often receive strong and permanent impressions when you least expect it.

The subject before us is a very large one, and I can do no more than give suggestions on certain points, following, partly, in the line of the excellent instructions given by the London County Council, with which, no doubt, you are perfectly familiar.

(1) The importance of ventilation, especially for children, I need not dwell on. It has been so impressed on us that it has become a fashion, a vogue, like baths. We all know that expired air contains

4 per cent. of carbonic acid, and how long it would take to fill a room with such air. We know, too, the effect of plants in purifying the air (in the day time). With regard to open windows, as Byron would say, "I know we're crammed with the best doctrines till we quite o'erflow." The open-air treatment of all things in general, and consumption in particular, we have at our fingers' ends. I can only touch on this point. In fact, ventilation is so much "in the air" that you will have little need to teach it. The rising generation can hardly escape this branch of education.

(2) There are moral as well as physical foes of hygiene and sources of disease. Of course I must not speak of "sin." That would be unscientific. Besides, it would be poaching on the preserves of the parsons. I am aware that now, even among them, *i.e.*, those of the "higher critie" type, there is no such thing as "sin." It is now the "contrariant influence of evil," a distinction without a difference, as I conceive it. But that I pass over. I prefer the old word, though I do not use it. I call it "perverted mental and moral energy," but it means just the same, only sometimes it consists in the absence of "moral energy," or any other energy, altogether. Negative evil, however, leads to positive. Sloth is a negative evil, but it results in very positive evils in the form of dirt, overcrowding, and starvation—all potent allies of disease. Where there is dirt there is concentration of microbes. Where there is overcrowding this concentration is still further increased, and the crowded ones are more susceptible. Where there is also starvation, this susceptibility has reached its climax. Sloth leads to ignorance and the neglect of all sanitary precautions and the defiance of nature's laws. It is the direct cause of conditions of ill-health, or what we call auto-intoxication, and the indirect cause of licentiousness and intemperance—all potent causes of susceptibility to disease. If, therefore, by precept and example, you can exorcise this evil demon, you will have taught one of the first and most important lessons in the practice of hygiene. For the essential mode of protection against disease is not the running away from real or imaginary microbes, but maintaining a sound standard of individual health. It is our own resisting power that we must cultivate, *mentem sanam in corpore sano*. Pathogenic microbes, as a rule, do not flourish in a perfectly healthy organism, and, independent of its accessory advantages, such as personal cleanliness and sanitary intelligence, activity of mind and body is the first essential to such a condition. But body first. Children, I believe, go to school far too young. The undeveloped brain is roused into artificial activity at the expense of nerve stability and physical soundness (often of brain power, too) for the rest of life. Physical training and the acquisition

of physical stamina must come first. But when mind and body are fully developed, then activity of both is essential. And of mind chiefly. Mental activity is the most important, will last the longest, and is, in the long run, the most sanitary. Physical activity is, after all, chiefly useful as a training for mental. We want the sound body, more especially that we may be able to use the sound mind. I must quote on this subject a great observer of boys and men, the late High-Master of St. Paul's School. "I do not hesitate to say," he says, "that if two boys start life together equally sound in constitution, and circumstances lead one to choose an open-air career of muscular exertion, and the other the life of the study and the cultivation of the brain, the student has the better chance of health and long life." This, too, you see, is in spite of disadvantages in the matter of pure air, etc. The red-faced, muscular, fox-hunting squire is a reversion to an earlier and lower type, and is further from the ideally healthy type than the pale student and brain-worker. Meanwhile we should get along much faster if we were to recognise the fact that, in nine cases out of ten, the theologian and the scientist are just saying the same thing in different words, and then quarrelling about it instead of working together. The former speaks of "sin," while the latter discusses "perverted mental and moral energy," both referring to the same psychical condition. The priest denounces "sins of omission," while the doctor denounces "sloth," both meaning the same. "Original sin!" "Oh, no! there is no such thing," says the scientist, with an air of superiority; "it is an exploded myth." But call it "Hereditary evil tendencies," and he will cease to deny its existence; while the difference between what the theologian calls "Temptations of the devil" and what the scientist calls "Personal or acquired evil tendencies" requires for its perception a more potent mental microscope than has yet been discovered. For, of course, the old-world dispute about the devil and demoniacal influence is entirely verbal and utterly futile. We know that evil exists, and that we must oppose its influence, but to know whence it arises is no help in guiding our conduct. We are constantly told that the devil is dead. If it be so, it is well to remember that his business is still being carried on; that, as tersely stated by a recent writer, it has been turned into an *unlimited* company, with increased powers and capital.

(3) The next subject on the syllabus is teeth. This seems rather a bathos after climbing to metaphysical heights: but even they have a moral bearing. Teeth, I consider—*i.e.*, carious teeth—are a product of civilisation, and partly, I think, of brain activity. Savage races, as a rule, have perfect teeth. Some will tell you it is our artificial methods of feeding. Not entirely, I think: the latter is partly a

necessity owing to defective teeth. I doubt if perfect teeth are, generally speaking, consistent with active and highly developed brains. As a result of some forty years' personal experience, I know that in my own case a decaying tooth is usually the sequel of any special mental effort. Meanwhile we have, most of us, defective teeth, and we must do our best to preserve them. Future generations may be born without teeth,* and have to live on bread and milk, but that time has not yet come. Carious teeth are manufacturing splendid material for the cultivation of pathogenic microbes, and should be attended to at the earliest moment. But prevention is better, when possible, and much may be done by care and cleanness (not, I may say, in the sense in which the word is used by the old Hebrew prophets, where "cleanness of teeth" is a kind of euphemism for *starvation*).

(4) The anti-hygienic effect of drink you will hardly need to teach your pupils. They have probably seen it themselves. Temperance, like ventilation, is in the air. They have heard about it. By consistent example you can, however, intensify the impressions made. But there are worse evils than drunkenness. An English bishop once said, "I would rather see England free than sober." I can hardly endorse this. Indeed, I would not. But, if the choice arose, I know that I would rather see England "pure" than "sober." And I am equally sure that I would rather see England "honest" than "sober." I said, some 20 years ago, that if drink had slain its thousands, licentiousness had slain its tens of thousands,† and I see the Bishop of London has lately quoted the remark. Apart from visible consequences in special diseases, it has a more depressing effect on the human organism, and renders it more readily a prey to disease. This is a fact which may surely be impressed on the young without going into unnecessary details. Shakespeare gives both as the great shorteners of life in his account of a healthy old age:—

For in my youth I never did apply
Hot and rebellious liquors in my blood ;
Nor did not, with unbashful forehead, woo
The means of weakness and debility.‡

The Jews are a survival of the fittest. They are still, mentally and physically, the finest race on earth. And there can be no doubt

* Our Chairman, the Rev. J. O. Bevan, in his concluding remarks drew my attention to the fact that children are generally born without teeth. I ought, no doubt, speaking to a non-medical audience, to have explained that biologists sometimes speak of the embryo in terms of ulterior developmental potentiality, a fact of which I have no doubt the reverend chairman was well aware.

† "Epidemics: Their Origin and Prevention."

‡ *As You Like It.*

that their superior vitality and longevity are the result of their greater purity than the surrounding nations, and their long training under the religious and hygienic code established by Moses.

(5) One practical conclusion, I think, is this. If we want a strong, healthy, and intellectual race we must have religious teaching in all our schools. I have pointed out its bearing on hygiene. But children will often listen to and follow dogmatic instruction when they will not understand, or will not attend to, vague scientific generalisations. To take one example only. If children were all trained by their teachers to acquire habits of strict honesty (not because honesty is the best policy, not as a matter of expediency, not for long drawn-out scientific reasons, but as a stern, inflexible moral duty) many of our sanitary difficulties would vanish into thin air. For example, if men did their duty honestly to their employers we should have no defective drains. If vendors were honest, milk would not be adulterated with contaminated water, and would not be supplied from tuberculous cows. The test for tubercle is perfectly easy, and but for the lack of this plain moral duty bovine tuberculosis might be exterminated throughout the country. If landlords, builders, and workmen all agreed to do their duty honestly there would be no damp, unhealthy, ill-built, and ill-ventilated houses. "A king," Burns says, "cannot mak' an honest man"; that is "aboon his might"; but a teacher can do much towards cultivating the material for one.

(6) But we must come down from the clouds again, and teach children to wash their hands. Moses taught even this as a religious duty. You will say, of course, that it was the only way of teaching anything to a nation in an early stage of moral and intellectual development. Hygienic principles would be unintelligible to them, so he commanded them simply to wash their hands before meals, and they did so. He did not trouble them with complicated scientific reasons. And remember that children are much in the same position. They are individually what the Hebrews were nationally, in a low state of development. Men, like nations, do not spring into full perfection ready-made. It is "line upon line, precept upon precept; here a little, and there a little"; or, to use the more modern and high-sounding words of Browning, we cannot hope to dispense—

With infancy's probation, straight begin

* * * * *

To stand full-statured in magnificence.

If this one habit of hand-washing were acquired we should not hear very much of lead-poisoning. If you were to see the hands of men working in potteries and at painting houses, you would not wonder at

their being poisoned if they eat their meals (as they constantly do) without washing them. Why do you and I wash our hands before meals? Not as a religious duty. Not, speaking generally, because we are afraid of swallowing certain poisonous microbes. We don't go through that process of reasoning every time. We do it simply because we should not feel comfortable without; in other words, because we have acquired a habit, a habit we were taught in our youth (it matters not how, but certainly not on scientific grounds, most of us), a habit which the lead-workers, the working painters and potters, have not been taught. Habits, mental, moral, and physical, acquired during the educational period are usually, if well established, retained through life. "The object of all education," Bacon says, "is to obtain good customs." This is all that schools are good for. Habit formation is their sole *raison d'être*. Habit is an essential part of our growth, or, in the sesquipedalian language of our modern scientists, "of the ontogenetic development of the human unit." "Habit," Dr. Darwin says, "is the capacity, acquired by repetition, of reacting to a fraction of the original environment." This means just the same as Bacon's statement that custom is stronger than intention. I prefer Bacon. Indeed, Bacon's aphorism as to the object of education sums up the whole matter, and is of more real value than all the wordy rhetoric of Herbert Spencer put together. Spenceer judged other minds by his own. He found that in his own case a principle was of more value as a guide than a rule. I believe a more extended experience would show the opposite to be more often the case. I know it is "a perilous shot out of an elder-gun that a poor and private displeasure can do against" so great "a monarch" of literature as Herbert Spencer. But I have had two advantages that Spencer had not, a scientific training and a large family of children. Spenceer's philosophical conclusions are often stultified by the lack of a sound scientific basis, and his theories of education are often similarly defective for want of constant observation and personal contact with a growing family.

(7) Consumption (tuberculosis) destroys about one-tenth of the inhabitants of these islands. Besides this, I am convinced, from the examination of *post-mortem* records, that nearly half the population of the country is attacked sooner or later by this disease. To put it more plainly, the chances are almost even that you and I either have, or have had, or will have, consumption in one of its forms. This statement, although it sounds appalling, is, in another point of view, rather encouraging, for it points to a large percentage of recoveries. That is to say, if the incidence of tubercle is, as I believe it to be, about 40 per cent., and the death-rate 10 per cent., this means 30 per

cent. of recoveries. The incidence of consumption, it is true, is lessening; but it still carries off more than all the acute infectious diseases put together. Its magnitude, therefore, makes it a subject of intense importance in relation to hygiene, which consists, essentially, in the prevention of diseased conditions. I have no wish, as I have no need, to be an alarmist, for I should say that tuberculophobia is about the most prevalent disease of the day. But prevention is better than cure; and, more than this, sensible precaution based on knowledge is better than senseless fear based on ignorance, as it usually is. In the first place, in view of the observations made on human beings and cattle, the hereditary character of tubercle may be practically disregarded. If you catch consumption it is in most cases from the actual expectoration of a consumptive patient, and, generally speaking, when it becomes dry. It is not taken from his breath except during an actual fit of coughing, and that is unlikely. Expectoration, therefore, must be studied like a fine art, or like any other subject of instruction; not only by recognised consumptives, but by all who are suffering from coughs; for in view of the large incidence of tubercle, and the number of recoveries, it is always possible that such coughs may be the result of slight temporary attacks of tubercle. A bacteriological examination is the only certain test. There are only two safe ways of spitting. One is to spit on the fire, the other is to spit on the ground in the open-air. In the first case the bacillus is burnt up. In the second, provided there is sufficient space, it is disinfected by the oxygen of the atmosphere, but even this must not be too full of human beings. I am urging, of course, a counsel of perfection, but if a patient spits in his pocket-handkerchief, he ought to put it on the fire the first opportunity. By allowing it to dry he is liable to infect others, and to shorten or destroy his own life. The great thing is not to allow the expectoration to dry, but to burn or disinfect it first. Cheap fibre handkerchiefs are now made for this especial purpose. If a patient spits on the floor—well, he ought to be locked up. Daylight and fresh air are fatal to the bacilli, and, although a patient cannot get this combination actually in his lungs, he can do his best towards it. We have referred to the dangers of over-crowding, of damp and ill-ventilated houses, of contaminated milk, of breathing foul and dust-laden air, and of accumulations of dirt, sewage, and decomposing material. Breathing through the nostril is an important precautionary factor. The nose is the natural protector of the lungs, and, when obstructed, may usually be relieved by operation. And a consumptive patient in a house should always have a well-ventilated room to himself, with windows open and a fire if necessary, and precautions should be taken to ensure disinfection. But there are

personal as well as outside precautions. The bacillus requires a favourable soil for cultivation. People with healthy appetites and wherewith to satisfy them, devoid of fancies, eaters of fat, oil, and butter in good quantity, living regular, active lives, and exceeding in nothing, are not very likely to take consumption. But where there are intemperance, starvation, debility, exhaustion, immoral lives, bad habits of any kind, overcrowding, want of ventilation, irritation of the lungs by the constant inhalation of dust, etc., the bacillus of tubercle will probably find a local habitation and a name. It is not necessary for children to know much about tubercle bacilli. A little knowledge is a dangerous thing. The less they know or think about such things the better. We do not want children to grow up morbid, neurotic, hypochondriacal, valetudinarian tuberculophobes. But they should know that there is such a disease as tubercle; that it affects cattle, and consequently meat and milk, and that it can be readily detected by the tuberculin test; that they may insist, when, later on, they have the power, by their exercise of the franchise, to influence the policy of their rulers, that this test should be compulsorily applied and acted on, for the health of the country largely depends on it.

You have asked for my views: I have given them. You will probably find them unpopular. But I am sure that within twenty years, probably less, they will be accepted by those best able to judge.

